

(1990). Investigating non-infectious disease clusters, Environmental Health Investigations Branch, California Department of Health Services.

INTRODUCTION (abbreviated abstract)

Goal: To enable local health departments to determine if reported clusters of non-infectious disease represent true excesses above “normal” levels.

Introduction to the problem

Epidemiological investigation of reported excesses of disease in the public is a basic function of a public health department. Prompt recognition of epidemics can lead to identification of causative agents and prevention of further cases. In the case of non-infectious disease, this task is often made more difficult by the relative dearth of knowledge of causative agents and the lack of readily available investigative tools. In addition, recent public concern about environmental health has led to an increase in the reporting of suspected clusters of illness to health departments.

Few local health departments are prepared to investigate these reports. The California Department of Health Services' Environmental Epidemiology and Toxicology Section has entered into a joint project with the Health Officers Association of California (HOAC) to develop an approach for addressing this problem in a public health protective and scientifically defensible manner. It is our hope that the following manual will assist local health departments to respond effectively to community concerns about environmental health issues.

Comparison to infectious disease clusters

Local and state health departments have nearly 90 years of experience in dealing with unexplained clusters of infectious disease and have developed standard protocols for dealing with them. Health departments have a relatively good batting average for explaining those infectious disease outbreaks, such as food-borne illnesses, which are due to a point source. In these cases, there is a good understanding of the biology of the responsible organisms, the incubation between exposure and clinical disease is relatively short, and there often are laboratory tests which can identify exposed groups and those with pre-clinical disease. In contrast, it is more difficult to explain sudden increases in infectious disease which do not have a point source. For example, the common cold and influenza may cluster in time and place for a myriad of reasons, but we usually do not try to explain these clusters because it would serve no useful purpose. This should be remembered when thinking about chronic disease clusters. Some may be explainable while others may never be.

Non-infectious disease clusters of cancer, birth defects, spontaneous abortions, Lou Gehrig's disease, etc., present a very different problem for state and local health departments, because we often do not fully understand the biology of these conditions. If there is a point source exposure, the latency period between exposure and the appearance of clinical disease may be months or years. Laboratory tests rarely exist which indicate exposure or pre-clinical disease. Some of these diseases may have several recognized causes and it is not known what, if any, proportion of these diseases is indeed due to point source environmental exposures. For all of these reasons,

epidemiologists do not have a good batting average in explaining non-infectious disease clusters.

Problems for lack of protocol

The lack of standard protocol has lead in the past to errors of omission and commission. There has been a tendency to delay in responding to community concerns which, in some cases, has lead to unnecessary anxiety and hostility. In other cases more elaborate measures have been taken than were really necessary. There has been confusion as to the respective roles of the local health departments and the several sections of the State Health Department.

What can this protocol manual do?

This manual aims at improving this situation by providing an overview of the steps in a cluster investigation, with particular emphasis on the early steps for which many local health departments may wish to take the role of the lead agency. It will emphasize the cooperative role of the concerned community member and the importance of a team approach involving both staff with health and environmental background. It will indicate decision points at which the local departments may wish to involve the State health Department and will indicate which parts of the State Health Department can be helpful with which aspects of the problem. This manual will help you to

1. Clarify roles and responsibilities between local and state agencies and identify resources available at the state and regional levels.
2. Assess initial illness cluster complaints and determine if investigation is warranted.
3. Identify other personnel who should be involved in investigations, determine if it is appropriate to form a team to conduct investigations, and form such a team as appropriate.
4. Communicate with informants and the general public.
5. Confirm and document alleged health problems and their extent.
6. Determine, at key decision making points, whether to continue the investigation and when to consult with the State.